Extended Abstracts Book, p.31
Ettore Majorana Foundation and Centre for Scientific Culture
37th Interdisciplinary Workshop of the International School of Geophysics
Erice, Sicily, 4-9 October 2011

The Earth Expansion Evidence

Ancient Life's Gravity and its Implications for the Expanding Earth

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Extended Abstract

Ancient Life's Gravity. Galileo Galilei seems to be the first scientist to emphasise how scale effects impose an upper limit on the size of life (Galilei, 1638). It was also well understood by at least the early 1900s how gravity was a limiting factor for the size of life (Thompson, 1917). A study of scale effects and gravity reveals that the relative scale of life would vary in different gravities (Hurrell, 1994, 2011).

This can be defined as:

$$S_r = 1/g_r \tag{1}$$

where S_r is the relative scale of life, and g_r is gravity relative to the Earth's current gravity. Formula (1) can be transposed to provide an estimate of ancient gravity based on the relative scale of ancient life, giving a formula of:

$$g_r = 1/S_r \tag{2}$$

Various methods, such as dynamic similarity, leg bone strength, ligament strength and blood pressure can be used to estimate reasonably accurate values of ancient gravity. Some of these ancient gravity estimates have been plotted in the graph in Fig. 1 together with the likely maximum errors.

Dynamic Similarity. A number of palaeontologists have noted that large dinosaurs appear to be dynamically similar to smaller animals alive today (Alexander, 1983, 1989; Bakker, 1986). The gravity at the time of ancient life can be estimated from the relative scale of dynamically similar ancient and modern life. In practice, the dynamic similarity of the largest life is the most easy to compare since this life defines the upper size limit for a particular form of life in a defined gravity.

Leg Bone Strength. The strength of leg bones necessary to support the mass of today's life has been measured by a number of researchers (Anderson et al, 1985). Researchers have also estimated the body mass of dinosaurs based on the volume of these dinosaurs (Colbert, 1962).

Since leg bone strength will be weaker in a reduced gravity, the gravity at the time of ancient life can be estimated from fossil leg bones. In general, the body mass estimates based on volume methods greatly exceed those based on leg bone strength. This variation between the body mass estimates and the leg bone strength can be used to roughly calculate ancient gravity when the ancient life was alive.

Ligament Strength. Ligaments are not fossilised but the size and shape of dinosaurs' bones have been used to estimate the strength of the neck ligaments of Diplodocus (Alexander, 1989). The gravity at the time of

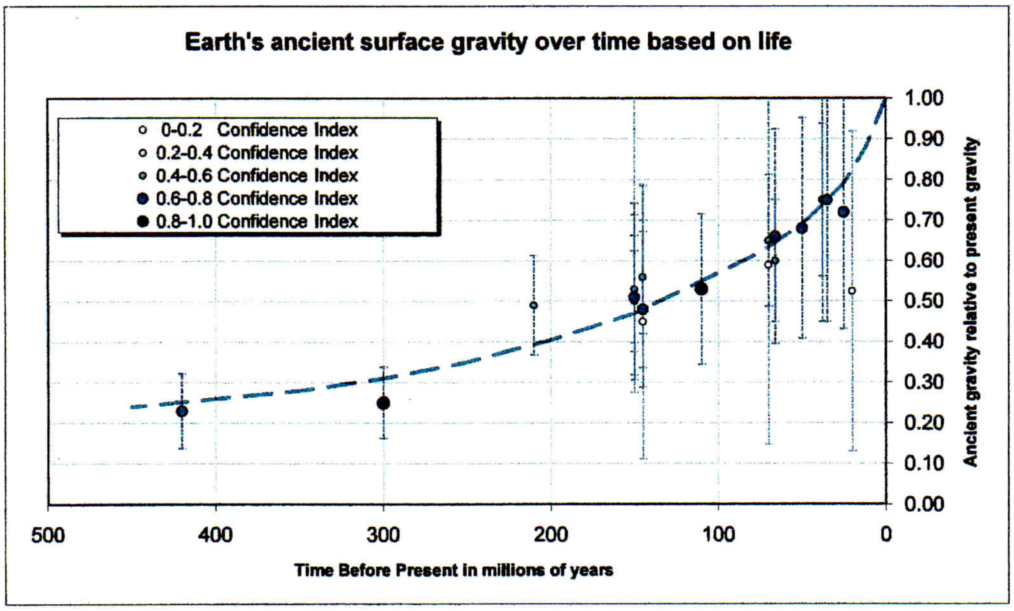

Fig. 1. Graph of the variation in Earth's gravity over hundreds of millions of years based on the relative size reduction of land life.

ancient life can be estimated from the strength of neck ligaments. The variation between the actual strength of the ligament and the required strength of the ligament can be used to estimate the relative scale of life and hence roughly calculate gravity when the ancient life was alive.

Blood Pressure. The relative scale of ancient life can be estimated from the blood pressure of ancient life. Blood pressure is proportional to blood mass, gravity and height so it is possible to calculate blood pressure in ancient life and compare this with the blood pressure of modern life.

Implications for the Expanding Earth. The larger relative scale of ancient life indicates that gravity was less on the ancient Earth and has slowly increased up to its present-day value as indicated in Fig. 1 and Table 1 using various estimation methods.

The estimates of ancient Earth's reduced gravity, indicated by the larger relative scale of ancient life, can be compared with estimates of gravity for Constant Mass and Increasing Mass Expanding Earth models. Since the force of the Earth's gravity is:

$$F = G \cdot M_1 \cdot M_2 / R^2 \quad (3)$$

where M_1 and M_2 are the masses of the two mutually attracting bodies, R is the distance separating them and G is Universal Constant of Gravity and the calculated force F is effectively the weight of the small body M_1, then it can be shown that the Reduced Gravity Earth model agrees most closely with an Increasing Mass Expanding Earth model. This indicates that Earth Expansion is due to mass increase (Hurrell, 1994, 2011).

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Common Name	Time (MYA)	Calculated relative gravity	Confidence Index	Estimation Method
Scorpion	420	0.23	0.70	Dynamic Similarity
Dragonfly	300	0.25	0.90	Dynamic Similarity
Plateosaurus	210	0.49	0.40	Leg Bone Strength
Diplodocus	150	0.51	0.77	Leg Bone Strength
Allosaurus	150	0.50	0.55	Leg Bone Strength
Diplodocus	150	0.53	0.47	Neck ligament
Apatosaurus	150	1.10	0.03	Leg Bone Strength
Brachiosaurus	145	0.48	0.63	Blood Pressure
Brachiosaurus	145	0.56	0.50	Leg Bone Strength
Brachiosaurus	145	0.45	0.36	Dynamic Similarity
Crocodile	110	0.53	0.90	Dynamic Similarity
Pterandon	70	0.65	0.54	Dynamic Similarity
Quetzalcoatus	70	0.59	0.16	Dynamic Similarity
Tyrannosaurus	66	0.66	0.63	Leg Bone Strength
Triceratops	66	0.60	0.54	Dynamic Similarity
Dasornis	50	0.68	0.64	Dynamic Similarity
Andrewsarchus	38	0.75	0.40	Dynamic Similarity
Brontotherium	35	0.75	0.72	Dynamic Similarity
Baluchitherium	25	0.72	0.72	Dynamic Similarity
Crocodile	20	0.53	0.18	Dynamic Similarity

Table 1. Table of the variation of Earth's gravity over hundreds of millions of years based on various comparisons of ancient and modern life.

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